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CPMA

COLOR PIGMENTS
MANUFACTURERS
ASSOCIATION, INC.

February 3, 1995

Mr. Thomas G. Allen
Deputy Director, Office of Hazardous Materials Standards
U.S. Department of Transportation
Research and Special Programs Administration
Room 8102
400 7th Street, S.W.
Washington, D.C. 20590-0001

Re: Petition for Letter of Interpretation and Change in DOT Rules Concerning Packaging and Labeling Standards for Self-Heating Substances as applied to Color Pigments.

Dear Mr. Allen:

The following petition is provided on behalf of the Color Pigments Manufacturers Association, Inc. ("CPMA")[1]. With this petition we are requesting that the Department of Transportation ("DOT") provide CPMA, on behalf of the regulated industry, a Letter of Interpretation ("LOI") which will allow CPMA members to utilize

[1] The Color Pigments Manufacturers Association, Inc. (CPMA), formerly DCMA -- the Dry Color Manufacturers' Association, is an industry trade association representing color pigment companies in Canada, Mexico, and the United States. CPMA represents small, medium, and large color pigments manufacturers throughout Canada, Mexico, and the United States, accounting for 95% of the production of color pigments in North America. Color pigments are widely used in product compositions of all kinds, including paints, inks, plastics, glass, synthetic fibers, ceramics, colored cement products, textiles, cosmetics, and artists' colors. Color pigment manufacturers located in other countries with sales in Canada, Mexico, and the United States and suppliers of intermediates to the color pigments industry are also members of the Association.

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the amendment to United Nations Standards approved by the United Nations Committee of Experts on the Transport of Dangerous Goods relative to Division 4.2 self-heating substances for shipments of color pigments.

Additionally, pursuant to 49 CFR §106.31 we petition for amendment of 49 CFR §173, Appendix E, (2)(b), self-heating materials, to substitute the revised self-heating test exemption approved by the U.N. Committee of Experts on the Transportation of Dangerous Goods for the current test. A copy of the changes adopted by the committee of experts is appended to this petition as Exhibit A.

BACKGROUND

This exemption is extremely important to manufacturers of color pigments[2] who have incurred considerable unnecessary cost as a direct result of the current self-heating provisions of 40 CFR §173, Appendix E, (2)(b). The current self-heating rules were introduced as part of the "Performance-Oriented Packaging Standards; Changes to Classification, Hazard Communication,

[2] The CPMA has defined color pigments as "colored, or fluorescent particulate organic or inorganic solids which usually are insoluble in, and essentially physically and chemically unaffected by, the vehicle or substrate in which they are incorporated. They alter appearance by selective absorption and/or by scattering of light. Color Pigments are usually dispersed in vehicles or substrates for application, as for instance in the manufacture of inks, paints, plastics, or other polymeric materials. Pigments retain a crystal or particulate structure throughout the coloration process".

packaging and Handling Requirements Based on UN Standards and Agency initiative, Final Rule", (the "Final Rule"). The Final Rule created new problems for the pigment industry in the United States. Since the provisions of 49 CFR §173, Appendix E, (2)(b) within the Final Rule were based on UN Standards, these provisions also created unwarranted packaging and labeling restrictions in Europe as well.

In response to this problem, the European Chemical Counsel ("CEFIC") proposed an exemption from specific requirements for packages which fall into the Division 4.2, Self-Heating Substances category. The CEFIC proposal was submitted to the Committee of Experts on the Transport of Dangerous goods, Sub-Committee of Experts on the Transport of Dangerous Goods. The proposal was reviewed by the Sub-committee at the its ninth session in Geneva Switzerland, July, 1994. The United States Department of Transportation ("DOT") sent representatives to the July, 1994 meeting in Geneva Switzerland. In preparation for that meeting, the DOT held a pubic hearing on the issues to be presented in Geneva. CPMA representatives attended the DOT public hearing and voiced our strong support for the CEFIC proposal concerning self-heating substances. DOT representatives to the July, 1994, Geneva meeting supported the CEFIC proposal for exemption. The CEFIC proposal was approved by the full subcommittee at the Geneva meeting.

As a result of this approval, the Final Rule should be amended in the United States to conform to international standards. As noted below, because of the costs incurred for compliance with the self heating test in the Final Rule, we request with this petition, that DOT provide a LOI allowing color pigment transporters to utilize the exemption provided in the approved CEFIC proposal. We also request an amendment of the Final Rule which will reflect this important change in international standards.

The CEFIC Proposal

The new international criteria used to define Division 4.2 self-heating substances in the Final Rule has created considerable unnecessary costs and delay in moving these goods through commerce both within the United States and internationally. Products which have been transported without problems for years are now classified as dangerous goods and have to be labelled in a manner which is often unnecessarily alarming. As stated by CEFIC in the approved proposal, self-heating within a package is directly related to the quantity of products exposed to an elevated surrounding temperature. This is characteristically shown for charcoal as a function of volume (on a logarithmic scale) versus the storage temperature at which self ignition is observed. The methodology of classification for self-heating substances under the Final Rule, and the international standards the Final Rule is based on, reflect the relationship between the ignition temperature and volume

(quantity) stored for charcoal.

Charcoal is, to a very great extent, a worst case example, products other than charcoal show a different relation between the volume of product stored and the ignition temperature. As a result of this relationship between volume stored and ignition temperature, the revised international standards, based on the CEFIC proposal, will provide a lower test temperature for samples that reflect shipment in Intermediate Bulk Containers ("IBCs") with a volume of less than or equal to $3m^3$. That test temperature will in the future be 120°C (plus or minus 2°C). Furthermore, for those packages which have a volume of less than or equal to 450 liters, the test temperature will be 100°C (plus or minus 2°C). This is compared to a current test temperature in the Final Rule of 140°C which is based on bulk packaging of $27m^3$ for charcoal.

INDUSTRY IMPACT

The following comments were provided by the CPMA in support of the CEFIC proposal and DOT support for the CEFIC proposal before the July, 1994 meeting in Geneva. These comments remain appropriate to this issue and reflect the current circumstances under the Final Rule.

1. The known history of shipping dry powdered color pigment products in the United States has not indicated a problem with self-heating in transit or storage.

2. Dry powdered color pigment products are not shipped in "bulk" (i.e., rail-car size containers). Instead, the largest packages used are smaller than three cubic meters. The test as originally written was for dry powders (specifically charcoal) shipped in bulk and has no relevance for smaller packages containing color pigment powders. The revised [CEFIC] proposal addresses this critically important point.

3. Classification of dry powdered color pigments as self-heating materials according to the current test protocol clearly results in "over-labeling"; a practice that DOT has previously indicated to be as bad as "under-labeling". Labeling of dry powdered color pigment products as "Spontaneously Combustible" visually infers that they are as dangerous as chemicals such as "Phosphorous White, Molten", "Sodium Hydrosulfide, Solid, with less than 25% water of crystallization", "Titanium Powder, Dry" and "Calcium, Pyrophoric" which also require "Spontaneously Combustible" labels. Furthermore, labeling of powdered color pigments as hazardous materials causes workers to inappropriately focus on these products with no tangible safety benefit. For example, one CPMA member company experienced a one to two pound transportation spill of a color pigment powder which was classified as self-heating material and labeled as "Spontaneously Combustible". The truck driver, believing that it was a serious incident, called for a hazardous materials response team to clean up the spill. This type of incident represents an adverse economic impact and a disruption to commerce which is unjustified.

Since the CEFIC proposal was approved in July, 1994 by the U.N. subcommittee, many CPMA member companies have compared the impact of the amended CEFIC exemption to the protocol provided in the Final Rule. The results of these tests unequivocally indicate

that many products which require additional labeling and special packaging under the Final Rule would return to the exempt, non-classified status which described these products prior to promulgation of the Final Rule. One member company alone has estimated that over 2 million pounds of product per year have to be unnecessarily labelled as hazardous, self-heating substances. If DOT requires this test information, please call us and we will make arrangements to collect and aggregate comparative data. The products impacted include the diarylide yellow pigments, the naphthol red pigments, rubine pigments, and many other resinated pigments. These are very significant products with large markets in the printing ink, coatings and plastics industries. These additional costs for labelling, packaging and handling materials classified as "hazardous" are not justified by any established risk.

In summary, pursuant to 49 CFR §106.31, our petition and appendices have set forth:

1) The text of the amendment sought by CPMA.

2) The interest CPMA has as petitioner in this matter.

3) The arguments available to CPMA in support of this petition.

The current self-heating test parameters, 49 CFR §173, Appendix E, (2)(b), do not depict the characteristics of color pigments accurately and CPMA requests that the current test be

replaced by the CEFIC amendment (Exhibit A) as soon as possible. In the interim, CPMA requests that DOT provide our members with an LOI which will allow members to test and label color pigments in accordance with the CEFIC amendment.

Should you have any questions please call me at Telephone No. (703) 684-4044 or Facsimile No. (703) 684-1795.

Sincerely,

J. Lawrence Robinson
President

JLR:daa

Enclosures

cc: Mr. Frits Wybenga
International Standards Coordinator
U.S. Department of Transportation
DHM5, Room 8422

Mr. Robert Richard,
Assistant International Standards Coordinator
U.S. Department of Transportation
DHM5, Room 8422

14.5.5.4 (new) Add a new sub-paragraph 14.5.5.4 to read as follows:

"14.5.5.4 Exemption of packing group III substances transported in IBCs and in packagings

Packing Group III substances which are transported in packages with a volume not more than $3m^3$ should be subject to the provisions of Division 4.2 only if in the test described in 14.5.5.2 conducted with a 100 mm cube sample kept at 120 ± 2 °C during the twenty-four hour testing time, a spontaneous ignition occurs or the sample temperature exceeds 200 °C.

Packing Group III substances which are transported in packages with a volume not more than 450 l should be subject to the provisions of Division 4.2 only if in the test described in 14.5.5.2 conducted with a 100 mm cube sample kept at 100 ± 2 °C during the twenty-four hour testing time a spontaneous ignition occurs or the sample temperature exceeds 200 °C.

The flow chart in Figure 14.4 illustrates the classification, packing group assignment and exemption procedure."
(Doc. Ref. ST/SG/AC.10/C.3/18/Add.1, Annex 1)

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ST/SG/AC.10/C.3/R.385 Rev.1

COMMITTEE OF EXPERTS ON THE TRANSPORT
OF DANGEROUS GOODS

Sub-Committee of Experts on the Transport
of Dangerous Goods
(Ninth session,
Geneva,
agenda item 10

DIVISION 4.2

SELF HEATING SUBSTANCES

Proposal for an exemption from specific requirements for packages with a volume up to $3m^3$ respectively 450 l

Proposal transmitted by the European Chemical Council (CEFIC)

1. Background

The introduction of new criteria in Division 4.2 to classify self-heating substances such as pigments has induced some major problems. Products which have been transported without problems for years, are now classified as dangerous goods and have to be labelled accordingly. This means additional costs for labelling, handling and storage without real improvements in safety.

CEFIC believes that it is justified to amend the procedure for classifying self-heating substances to avoid overclassification. Most of the products concerned have in common that they are only shipped in packages with a volume not exceeding $3m^3$.

For example pigments have a world wide use of 650.000 t/a. Roughly one third of these have to be classified as self-heating substances and have to be labelled accordingly although they never self-heat if the package volume is less than or equal to $3m^3$.

3. Proposal

CEFIC proposes to add a new sub-paragraph 14.5.5.4.

14.5.5.4. Exemption for products of packing group III transported in IBCs and in packagings.

Substances which are transported in IBCs with a volume ≤ $3m^3$ should only be subject to the requirements of Division 4.2, if the test procedures as described in 14.5.5.2 being carried out by using a 100 mm cube sample kept at 120 ± 2°C during the twenty-four hour testing time shows a spontaneous ignition or the sample temperature exceeds 200°C.

Substances which are transported in packages with a volume ≤ 450 l should only be subject to the requirements of Division 4.2, if the test procedure as described in 14.5.5.2 being carried out by using a 100 mm cube sample kept at 100 ± 2°C during the twenty-four hour testing time shows a spontaneous ignition or the sample temperature exceeds 200°C.

Attached flow chart illustrates the classification, packing group assignment and exemption procedure, Figure xxx.

Diagram 1: Relation between self-ignition temperature and the volume of substances stored - Examples of two substances considered for exemption

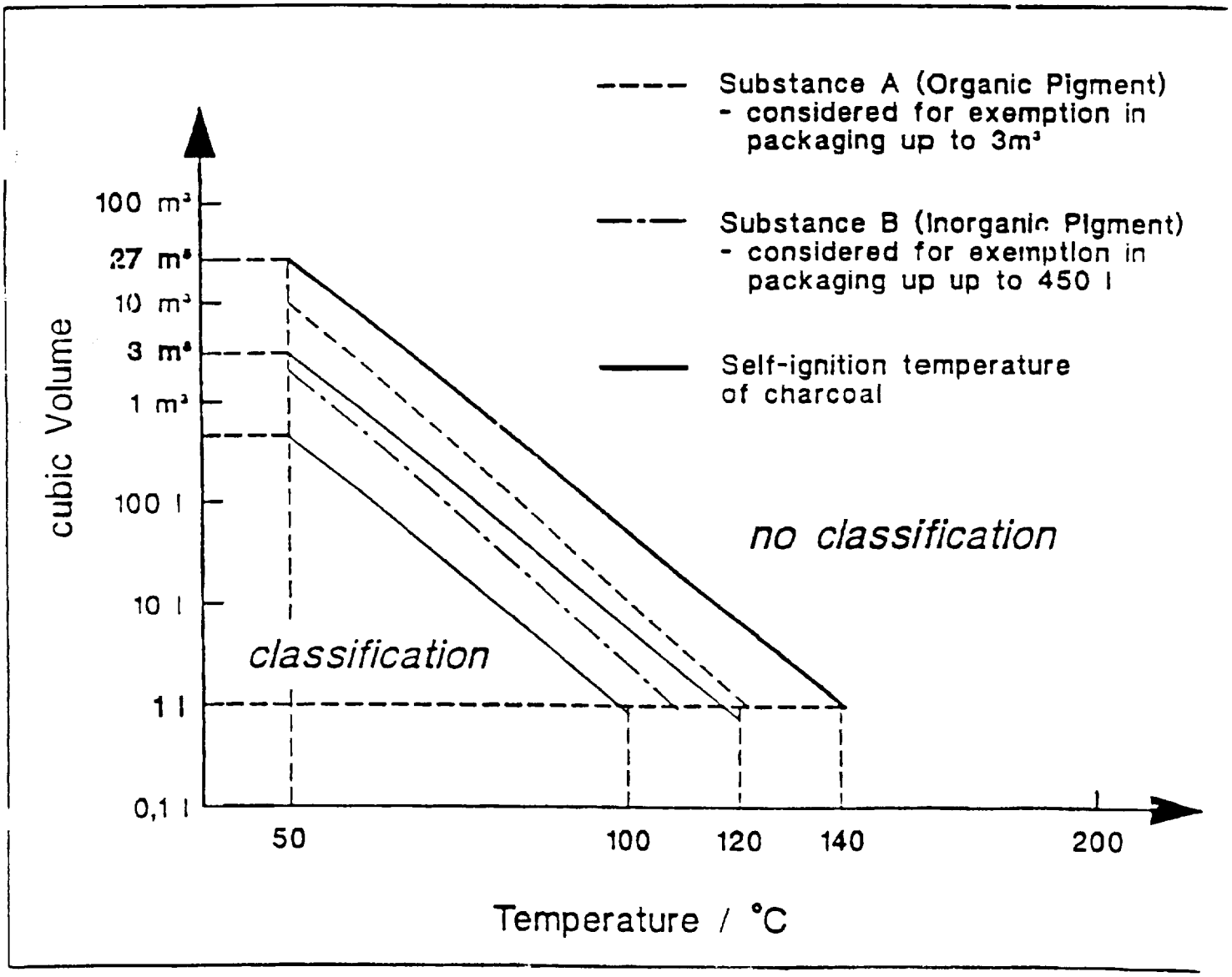


Diagram 2: Relation between self-ignition temperature and the volume of packages
- Revised methodology for granting exemptions for certain packages

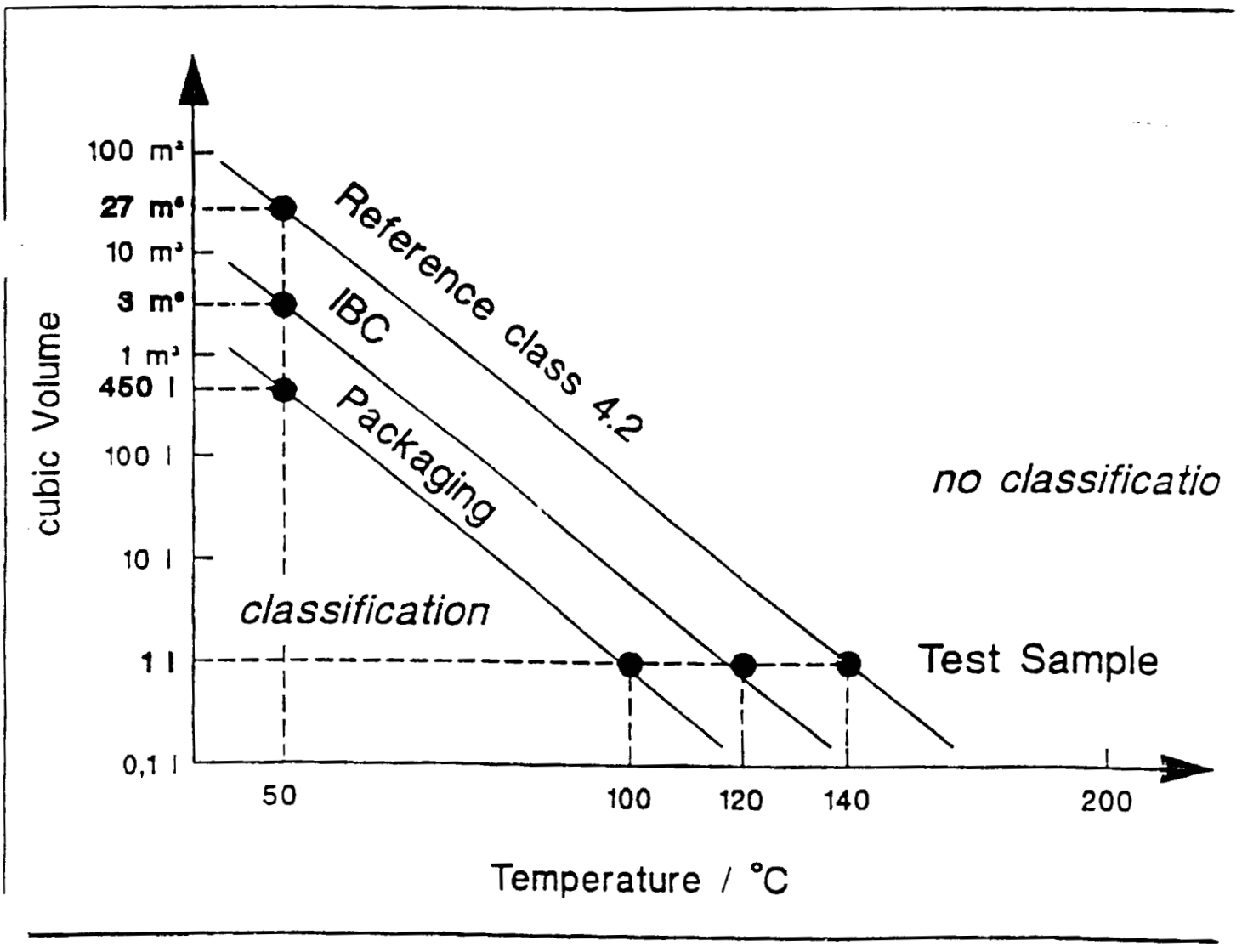
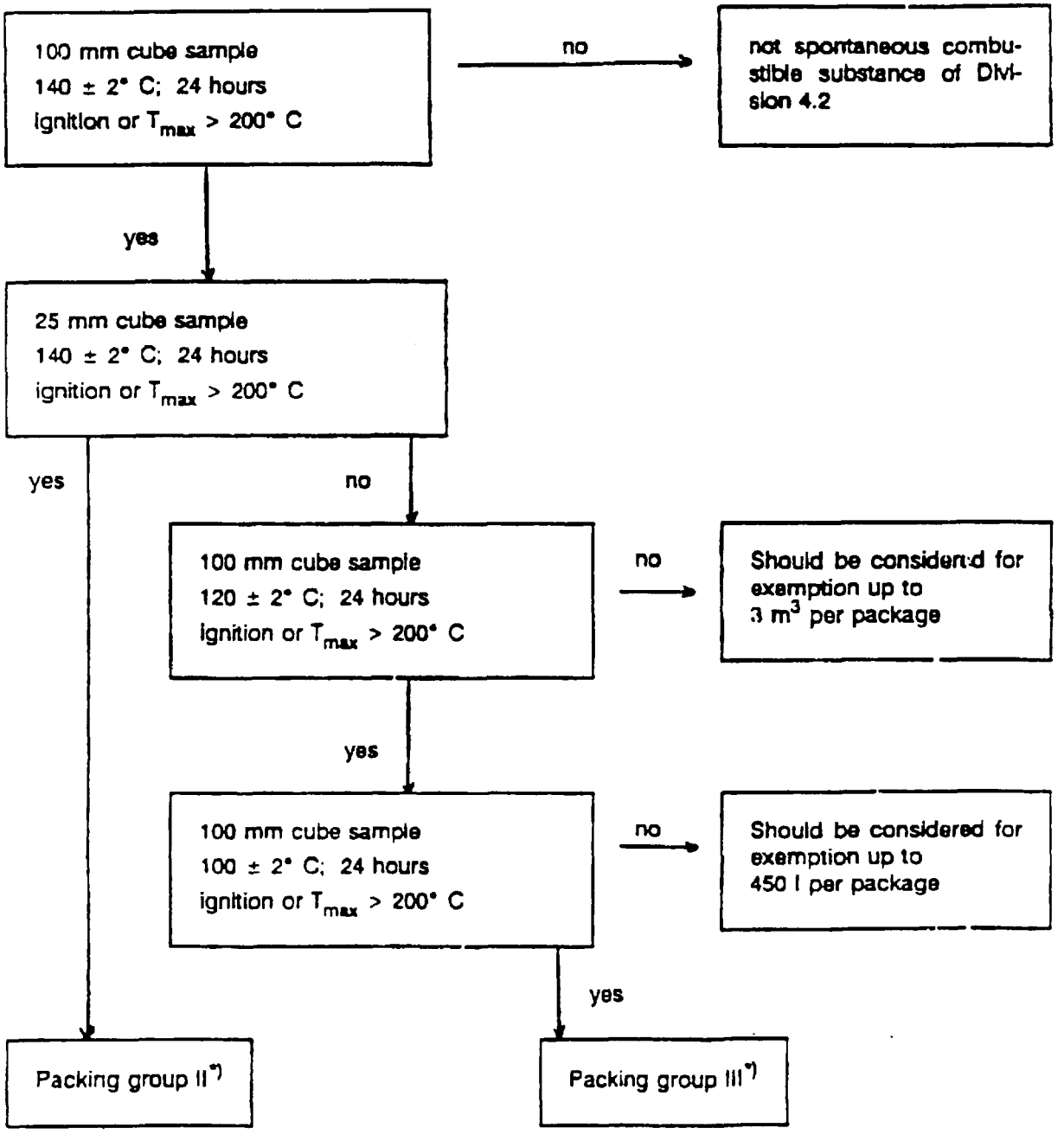


Figure xxx **Flow Chart for Classification, Packing group assignment and Exemption for certain package volume**



*) With reference to 14.5.5.3 substances with self-ignition temperatures higher than 50 °C for 27 m^3 should not be classified in Division 4.2.